MENTAL HEALTH INTENSIVE CASE MANAGEMENT (MHICM) IN THE DEPARTMENT OF VETERANS AFFAIRS: THE EIGHTH NATIONAL PERFORMANCE MONITORING REPORT FY 2004

Department of Veterans Affairs

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Mental Health Intensive Case Management (MHICM) in the Department of Veterans Affairs: The Eighth National Performance Monitoring Report - FY 2004

FINAL DRAFT

July 26, 2005

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Executive Summary

This is the eighth national report on the evaluation of the Department of Veterans Affairs Mental Health Intensive Case Management (MHICM) program, previously called "Intensive Psychiatric Community Care" or "IPCC". MHICM is an innovative, experimentally validated approach to care for veterans with severe and persistent mental illness. Previous reports (Rosenheck et al., 1997; Neale et al., 1998-2004) have demonstrated that: 1) assertive community treatment is a cost-effective service for veterans with serious mental illness who are high users of VA inpatient resources; 2) MHICM benefits are maintained over the long-term (2-5 years); and 3) MHICM can be implemented and monitored in VA settings nationally. This report, which presents performance data for FY 2004 refers to early efforts and evaluations as "IPCC" and recent teams and data as "MHICM".

The MHICM Program

VHA Directive 2000-034, issued on October 2, 2000, defined "Mental Health Intensive Case Management" and identified criteria for client entry, program operation and monitoring. MHICM teams seek to deliver high quality services that: 1) provide intensive, flexible community support; 2) improve health status (reduce psychiatric symptoms & substance abuse); 3) reduce psychiatric inpatient hospital use and dependency; 4) improve community adjustment, functioning, and quality of life; 5) enhance satisfaction with services; and 6) reduce treatment costs.

Extensive literature demonstrating that assertive community treatment (ACT) or intensive case management teams can improve clinical status and reduce psychiatric hospital use for people with serious mental illness has prompted researchers, practitioners and advocates to identify ACT as an essential evidence-based practice for this population (Drake et al., 2001, Phillips et al., 2001). MHICM teams modeled on ACT provide individualized services in the community for veterans with serious mental illness. MHICM services are organized around a core set of treatment elements described in VHA Directive 2000-034: 1) Intensity of contact; 2) Flexibility and community orientation; 3) Rehabilitation focus; and 4) Continuity and responsibility.

Dissemination and Team Structure

FY 2004 ended with 78 MHICM teams in operation, with at least a dozen more in development. VHA Directive 2000-034 specifies MHICM performance and outcome monitoring by the Northeast Program Evaluation Center (NEPEC), VA Connecticut Healthcare System. Data are presented here for 4,761 veterans who received MHICM services in FY 2004 from 71 teams with 10 or more clients that collected outcome data for the period. Of this group, 4,057 veterans (85%) had entry interview data, 2,805 (59%) had follow-up interview data, and 3,619 (76%) had clinical progress report data. Another 407 veterans entered MHICM from pre-existing case management programs, with a lower standard of client monitoring. Increases in the number of MHICM teams (+95%) and clients (+136%) since 1997 have had relatively little effect on program cost per client (+17%; $7,105) or client-to-staff ratio (+2%; 12.5 per FTE) in FY 2004. At the same time, 49% of teams had fewer than 4.0 clinical FTE, the standard set forth in VHA Directive 2000-034, or had staff detailed to other services (16%).

Client Characteristics

Overall, 89% of MHICM veterans had a diagnosis of psychotic illness at entry and had spent an average of 80 days in the hospital in the previous year. Almost half of MHICM clients (44%) had been hospitalized for *more than two years* in their lives, with over two decades of illness since their

first hospital stay. Virtually all MHICM clients (94%) received VA and/or Social Security funds for their disability. A majority (55%) received VA compensation for a service-connected disability and half (47%) had a representative payee manage their funds. Clearly, this group of veterans is dealing with long-term illness and severe disability. Client characteristics have remained fairly stable since 1997, though pre-admission hospital days have declined by 41%, following overall VA trends.

Service Delivery

Altogether 88% of MHICM veterans were seen weekly or more frequently by MHICM team staff; 61% were seen for more than one hour per week; and 89% received the majority of their care in the community. MHICM clients had an average of 69 face-to-face contacts with MHICM staff during FY 2004, or 1.3 face-to-face visits per veteran weekly. Contacts in FY 2004 (1.33) were lower than 1997 (1.64) but comparable to FY 2003 (1.35). A total of 749 veterans (16%) were discharged from the program during the year and 137 veterans (3%) were transitioned to less intensive services after meeting criteria specified in VHA Directive 2000-034. On average, MHICM veterans had received services for 1,301 days or more than 3 1/2 years.

Outcomes

Veterans treated by MHICM teams showed average reductions in psychiatric hospital days of 30 days (71%) during their first six months in the program and proportionate reductions through 12, 18, and 24 month periods, all statistically significant. All but two teams reduced hospital use for all time periods. Outcome analyses found statistically significant improvements of 14% on clinician-rated symptoms (BPRS mean change: -5.72, $t=-17.34$, $p<0.0001$) and 13% on client-reported symptom severity scores (mean change: -0.22, $t=-16.65$, $p<0.0001$). Client-reported housing independence increased by 13% (mean change: +0.40, $t=16.22$, $p<0.0001$) and quality of life improved by 10% (mean change: +2.56, $t=18.68$, $p<0.0001$). MHICM veterans were significantly more satisfied with MHICM services relative to standard VA mental health care (+19%; mean change: +0.58, $t=23.08$, $p<0.0001$). This was reflected in higher satisfaction with overall VA mental health services at follow-up (+9%; mean change: +0.35, $t=12.70$, $p<0.0001$). FY 2004 client outcomes were comparable to FY 2003 levels and consistently higher (+11% to +117%) than 1997 values.

Adherence to Model Standards

Review of team reports and outlier values supports continued monitoring of team resources and performance and attention to staff training needs. VHA Directive 2000-034 established guidelines for MHICM team operation that have been translated into a set of minimum standards and monitored to identify performance outliers. Eighteen of seventy-one MHICM teams (25%) met all eight minimum program standards in FY 2004, comparable with 15 teams (24%) in FY 2003. A network planning initiative and quarterly circulation of monitoring data to network leaders, begun in FY 2001, continue to enhance the implementation of MHICM teams nationwide.

Conclusion

Development of MHICM in VHA has followed a model sequence of problem identification, program development, evaluation and dissemination (Rosenheck and Neale, 2001; Rosenheck, 2001). Careful implementation and sustained monitoring have resulted in effective community-based services for veterans with serious mental illness, a highly vulnerable population. MHICM has been successfully disseminated to more than 70 facilities and site-by-site monitoring data show it continues to provide effective and efficient services to several thousand deserving veterans in great need.

Acknowledgments

We dedicate this Eighth National Performance Monitoring Report to the thousands of veterans served by MHICM teams since 1987 and those with serious mental illness who have yet to benefit from community-based services. At this stage of the MHICM history, few veterans or family members are likely to read this report, to review program data with MHICM team members or to provide feedback that affects program operation. That is likely to change with implementation of the Mental Health Strategic Plan, as veterans and family members are invited to become partners through advisory groups and participate in evaluation, planning and service delivery in ways that reshape the nature of VHA and MHICM services.

This report and the successful dissemination of MHICM owe much to ongoing support from Mark Shelhorse MD, outgoing Acting Chief Consultant, and William Van Stone MD, Associate Chief Consultant for Psychiatry and Coordinator of SMI Veterans Programs, for the Mental Health Strategic Healthcare Group; Miklos Losonczy MD PhD and Steven Cavicchia PhD (Co-Chairs) and members of the SCMI Committee and its Consumer Council; and Paul Errera MD, who continues to advocate for community-based services for veterans with serious mental illness.

Implementation of MHICM teams within VA has also benefited from efforts on behalf of assertive community treatment by individuals in the public sector, including: William Knoedler MD, Deborah Allness MSSW, Mary Ann Test PhD and the Program for Assertive Community Treatment in Madison, Wisconsin; Claudia Wink-Basing MSW, Cheri Sixbey CSW and the Assertive Community Treatment Association, Inc.; Neil Meisler MSW and Alberto Santos MD from the Medical University of South Carolina; Fred Frese PhD, Elizabeth Edgar RN, Dottie Sayer, Bonnie Banks, June Judge, Jane Fyer, Moe Armstrong and the Veterans Committee from the National Alliance for the Mentally Ill; and the Center for Mental Health Services at the Substance Abuse and Mental Health Services Administration (SAMHSA).

At NEPEC, Bernice Zigler, Alexandra Ackles and the Office of Information Services under David Bruce continue to improve our data management and communication capabilities in the face of a rapidly growing client population. We thank them all for their patience and invaluable support.

List of Acronyms and Abbreviations

ACCESS	**MICROSOFT OFFICE RELATIONAL DATABASE SOFTWARE**
ACT	**ASSERTIVE COMMUNITY TREATMENT (PROGRAM MODEL)**
ADJ	**ADJUSTED SCORE**
AVG/MN	**AVERAGE**
BPRS	**BRIEF PSYCHIATRIC RATING SCALE**
BSI	**BRIEF SYMPTOM INVENTORY**
CM	**CASE MANAGEMENT OR CASE MANAGER**
CPR	**CLINICAL PROGRESS REPORT FORM (NEPEC MONITORING FORM 39)**
DSS	**DECISION SUPPORT SYSTEM (VHA FISCAL SOFTWARE)**
DX	**DIAGNOSIS**
FDF	**FOLLOW-UP DATA FORM (NEPEC MONITORING FORM 37)**
FTE	**FULL TIME EQUIVALENT POSITION**
FY	**FISCAL YEAR**
GAF	**GLOBAL ASSESSMENT OF FUNCTIONING SCORE**
GM+S	**GENERAL MEDICINE AND SURGERY FACILITY**
GTE	**GREATER THAN OR EQUAL TO**
HOUI	**HOUSING INDEPENDENCE INDEX**
IADL	**INSTRUMENTAL ACTIVITIES OF DAILY LIVING**
IDF	**INITIAL DATA FORM (NEPEC MONITORING FORM 34)**
IDF DATE	**INITIAL DATA FORM DATE**
IP	**INPATIENT**
MAX	**MAXIMUM**
MD	**PHYSICIAN, PSYCHIATRIST**
MH	**MENTAL HEALTH**
MIN	**MINIMUM**
NEPEC	**NORTHEAST PROGRAM EVALUATION CENTER (WEST HAVEN, CONNECTICUT)**
NP	**FORMER NEUROPSYCHIATRIC FACILITY**
NSC	**NON-SERVICE-CONNECTED**
OPC	**OUTPATIENT CLINIC FILE (VHA OUTPATIENT AUTOMATED DATA, AUSTIN TX)**
PTF	**PATIENT TREATMENT FILE (VHA INPATIENT AUTOMATED DATA, AUSTIN TX)**
PRE-ENTRY	**PERIOD BEFORE ADMISSION TO MHICM**
QOL	**QUALITY OF LIFE SCALE**
RN	**NURSE**
SAS	**STATISTICAL ANALYSIS SYSTEM SOFTWARE**
SC	**SERVICE-CONNECTED**
SSI	**SOCIAL SECURITY SUPPLEMENTAL INCOME**
SSDI	**SOCIAL SECURITY DISABILITY INCOME**
TX	**TREATMENT**
YR	**YEAR**
VERA	**VETERANS EQUITABLE RESOURCE ALLOCATION (VA BUDGETING STRUCTURE)**
VHA	**VETERANS HEALTH ADMINISTRATION**
VISN	**VETERANS INTEGRATED SERVICE NETWORK (MULTI-SITE HEALTH SYSTEM)**

Table of Contents

Tables (continued):

Figures:

Appendices:

Chapter One: Mental Health Intensive Case Management in a Changing VA Health Care System

Changes in VA Mental Health Care

The closing years of the twentieth century confronted the Department of Veterans Affairs (VA) and other public mental health systems with the challenge of providing appropriate, humane and efficient care to people with serious mental illness. Despite closing 40,000 psychiatric hospital beds between 1957 and 1988, VA relied heavily on inpatient treatment through the 1990's, spending over 70% of its mental health budget on hospital care as recently as FY 1996 (Rosenheck, 1997).

In 1995, the Veterans Health Administration (VHA) began a fundamental reorganization of its structure and services in pursuit of a more comprehensive, integrated healthcare system, with enhanced priorities of customer satisfaction, cost efficiency, and accountability. Manifestations of change have included the introduction of data-based approaches to care and management, decentralization of VA administrative and budget authority to 22 veterans integrated service networks (VISNs), reallocation of healthcare resources, and a shift of focus from inpatient services to outpatient, community-based and electronic modes of care.

In mental health, organizational changes have prompted dramatic reductions in VA inpatient service use. Between Fiscal Years 1995 and 2004, lengths of stay in general psychiatry inpatient programs declined by 62% (from 32 to 12 days), and 6,006 general psychiatry beds (66% of the 1995 total {9,058}) were closed. These included 1,479 (84%) long-stay beds (occupied for more than 1 year) (Greenberg and Rosenheck, 2004). Inpatient mental health care continues to account for more than half of VA mental health expenditures ($1.2B; 53.6%), despite a reduction of 20.2% since 1995, and there are signs that inpatient resources have stabilized after years of dramatic decline. In FY 2004, only 58 general psychiatry beds (2% of the FY 2003 total) were closed. Reductions in inpatient beds have been offset, at least in part, by significant expansion of outpatient and residential rehabilitation services. Between FY 1995 and 2004, the number of veterans receiving VA outpatient mental health services increased by 288,798 (52.3%) and the number of clinical contacts per treated veteran fell from 12.8 to 12.0 (-6.7%). Unadjusted for inflation, overall mental health expenditures have risen modestly since 1995, increasing by $302M (13.0%) and falling from 15.6% to 10.8% (-31%) as a percentage of all VA clinical costs (Rosenheck, 1996; Greenberg and Rosenheck, 2004).

The shift from inpatient to outpatient mental health care in VA would be expected to have its greatest impact on those with the most severely disabling mental illnesses, veterans who have traditionally relied on hospital treatment, especially long-term hospital treatment -- veterans who perhaps can least tolerate rapid change. People with serious mental illness are among the "least well off" (Rosenheck et al., 1998) and most vulnerable, commonly falling prey to homelessness, substance abuse, profound social isolation, and vocational dysfunction (Grob, 1994). Ethicists (Callahan, 1995; Boyle, 1995) and services researchers (Rosenheck, 1999; Schlesinger, 1995; Schlesinger and Mechanic, 1993) have emphasized that core values in our society urge us not to neglect the most vulnerable citizens, and to recognize that their vulnerability earns them special claim on public

resources. Ethical and societal goals warrant careful attention to developing and monitoring quality mental health services, particularly for the most needy veterans.

Accountability and Monitoring

VA healthcare increasingly emphasizes value, customer service, and accountability and provides specific impetus for implementation and careful monitoring of community-based care (Kizer, 1998). VA values clearly underscore the need for alternatives to inpatient hospitalization and enhanced attention to accountability and customer satisfaction. The Veterans Eligibility Reform Act of 1996 (Public Law 104-262, Section 104), furthermore, committed VA to maintain its capacity to provide specialized services for the most vulnerable veterans and mandates review of leadership reports on capacity by the VA Under Secretary for Health's Special Committee for the Care of Severely Chronically Mentally Ill Veterans (the "SMI Committee"). In 1999, the Under Secretary approved a recommendation by the SMI Committee to make intensive case management programs such as IPCC more widely available for veterans with serious mental illness (Recommendation 3, SMI Committee, 1999). In 2000, his successor issued a directive (VHA 2000-034) that defined "Mental Health Intensive Case Management" services for veterans with serious mental illnesses.

Case Management and Assertive Community Treatment (ACT)

For several decades, mental health clinicians and researchers, dismayed by the adverse consequences of precipitous State Hospital closures during the 1960's and 1970's, have sought to develop humane, health-promoting alternatives to long term hospital care for severely mentally ill persons in community settings. Case management services have emerged as a widely preferred alternative to fragmented outpatient care. In this approach, a specialist takes responsibility for facilitating access to and coordinating delivery of the full range of services needed by people with severe mental illness. General, or broker model, case management has been used for a variety of purposes ranging from cost cutting to improving clinical outcomes, and has only limited research support for its effectiveness. **Assertive community treatment** (**ACT**), a model of integrated, intensive, and comprehensive services provided by a team of skilled clinical case managers in community settings, offers a more supportive approach for individuals with serious mental illness that has been carefully developed and evaluated.

ACT was first implemented as the Program of Assertive Community Treatment (PACT) in Madison Wisconsin over 25 years ago and evaluated in a series of experimental studies (Marx et al, 1973; Stein et al., 1975; Stein and Test, 1980a, 1980b; Weisbrod et al., 1980). ACT clinicians meet their clients in the community and provide comprehensive services, including social support, skills training, and medical care, wherever and whenever they are most needed (Allness and Knoedler, 2003; Stein and Santos, 1998). A team of up to 15 case managers provides an individualized care system in the community, replacing the custodial functions of an institution with personal support and therapeutic skills training in natural settings.[1]

[1] A typical PACT team is staffed with a multi-disciplinary group of 10-15 clinicians who are configured to provide a comprehensive array of clinical and rehabilitation services every day (including evenings, weekends, holidays) and ensure 24 hour per day access for needed crisis intervention (Allness and Knoedler, 2003). A typical ACT team has 5-8 clinicians who, by necessity, provide less comprehensive services for fewer hours per week and rely on emergency/admitting staff or others to consult them about off-hour crises.

ACT Replication and Research

In the early 1980's, the success of the Madison PACT studies began to influence public policy. Wisconsin shifted inpatient treatment funds toward community-based services and Michigan funded Harbinger, the first replication of the PACT experiment (Mowbray et al., 1997; Mulder, 1985). By 1987, ACT principles had been adapted in demonstrations by numerous municipal and state mental health care systems, including Chicago, Philadelphia, Ohio, and New York (Test, 1992; Olfson, 1990; Burns and Santos, 1995; Deci et al., 1995). Replications varied with respect to the breadth and intensity of services, the accessibility and training of staff, and their effectiveness (Olfson, 1990; Stein, 1990; Deci et al., 1995; Essock and Kontos, 1995). Over the next ten years, at least 14 states developed ACT initiatives (Allness et al., 1997; Meisler, 1997). Rhode Island, Delaware and Texas established ACT as a standard "best practice" and required state-funded providers of services for the seriously mentally ill to develop ACT team services for their most troubled clients. In 1998, the Schizophrenia Patient Outcomes Research Team (PORT) highlighted ACT's effectiveness and relatively limited dissemination in its findings (Lehman et al., 1998). A year later, the National Alliance for the Mentally Ill (NAMI) made state funding for ACT services a central element of its anti-stigma advocacy campaign (NAMI, 1999). By 2004, most states reported the presence of an ACT team or active legislative/lobbying effort, with some (e.g., Florida, Illinois, Indiana, New Jersey, Virginia) funding multi-site state ACT initiatives (NAMI, 2004). Outside the United States, ACT has been adopted in Canada, Europe and around the world (Burns et al., 2001). Recent comparison of VA and non-VA treatments for schizophrenia found that VA clients were less likely to receive case management services (Rosenheck et al., 2001).

Experimental studies published over 20 years have reported that concentrating treatment resources in community-based ACT teams or intensive case management programs can result in improved clinical status of severely mentally ill patients at no additional cost (Bond et al., 1989; Hoult et al, 1984; Mulder, 1985; Stein and Test, 1980; Wasylenki et al., 1985; Weisbrod, Stein and Test, 1980). Other studies, however, have found case management to be associated with no clinical change and/or increased service utilization and cost (Bond et al., 1991; Curtis et al., 1992; Drake et al., 1998; Essock et al., 1998; Franklin et al., 1987; McFarlane et al., 1992). Literature reviews have concluded that intensive community treatment frequently reduces hospital use but does not always achieve net cost-savings or clinical improvement (Burns and Santos, 1995; Mueser, 1998; Olfson, 1992; Scott and Dixon, 1995). Most recent reviews have identified assertive community treatment as a clinically effective "evidence-based practice" when implemented correctly which can be cost-effective for clients who are high users of inpatient services (Phillips et al., 2001). A Cochrane Review concluded that ACT clients were more likely to stay in treatment and out of the hospital, to live more independently, and to be more satisfied with care than clients who received standard community or case management services (Marshall and Lockwood, 2002).

VA Demonstration: MHI, IPCC

VA initiated a demonstration program of intensive case management teams based on ACT principles at ten northeastern VA medical centers in 1987. Originally a regional demonstration (the Region 1 Mental Health Initiatives or MHI), VA's adaptation of assertive community treatment became known as Intensive Psychiatric Community Care (IPCC). A rigorous experimental study of this effort demonstrated the cost-effectiveness of this approach in VA (Rosenheck et al., 1995;

Rosenheck and Neale, 1998a). IPCC, while developed for the most troubled, high hospital users, was based on flexible operation guidelines that may be applied, with modifications, to other patient populations. Studies have shown that effective program performance requires adherence to the treatment model supported by training and performance monitoring (Rosenheck and Neale, 2001).

MHICM (formerly IPCC) Program Objectives and Principles

MHICM services are delivered by integrated, multidisciplinary teams and based on the Substance Abuse Mental Health Services Administration (SAMHSA) ACT standards. MHICM teams seek to deliver high quality services that:

- provide intensive, flexible community support;
- improve health status (reduce psychiatric symptoms & substance abuse);
- reduce psychiatric inpatient hospital use and dependency;
- improve community adjustment, functioning, and quality of life;
- enhance satisfaction with services; and
- reduce treatment costs.

To accomplish these objectives, MHICM teams adhere to four core treatment elements, most recently outlined in VHA Directive 2000-034:

- Intensity of Contact. High intensity of care primarily through home and community visits, with low caseloads (seven to fifteen veterans per clinician), allowing rapid attention to crisis and development of community living skills to prevent crisis in this exceptionally vulnerable population.

- Flexibility and Community Orientation. Flexibility and community orientation with most services provided in community settings and involving integration with natural support systems whenever possible (e.g., family members, landlords, employer).

- Rehabilitation Focus. Focus on rehabilitation through practical problem solving, crisis resolution, adaptive skill building, and transition to self-care and independent living where possible.

- Continuity and Responsibility. Identification of the team as a "fixed point of clinical responsibility" providing continuity of care for each veteran, wherever the veteran happens to be, for at least one year, with subsequent care subject to review of continuing need for intensive services.

Demonstration Findings

Analysis of data from the original multi-site MHI demonstration project yielded evidence that assertive community treatment principles could be adapted successfully within the VA healthcare system, that community-based treatment approaches could be effective in reducing hospital use and costs and improving clinical status, and that positive outcomes could be sustained or enhanced over extended time periods. Two-year demonstration findings (Rosenheck and Neale, 1998a) confirmed previous experimental research by showing significant reductions in hospital use and costs, and improvements in psychiatric status and social functioning, for veterans receiving IPCC services (Burns and Santos, 1995; Olfson, 1989; Scott and Dixon, 1995). Overall, average health care costs were $4,860 (13%) less per patient per year for those treated in IPCC. The demonstration also illustrated the value of program monitoring that addresses facility and client characteristics, administrative mission and support, and model fidelity, all of which can substantially influence program development and impact (Rosenheck and Neale, 1998b; 2001).

Program Performance Monitoring

The resource intensity of IPCC services and the program's novelty for VA have warranted collection of data on client status, service delivery and utilization, and clinical and cost outcomes, through a national monitoring and evaluation system developed and managed by VA's Northeast Program Evaluation Center (NEPEC). Integration and feedback of national data have reinforced program accountability and maintained performance standards that have been shown in the scientific literature to be essential to program effectiveness.

The 1997 IPCC Report: 1) reviewed findings from a two-year experimental design evaluation of IPCC in VA; 2) presented extended follow-up data addressing long-term clinical and cost impact on a subset of patients whose progress was followed for up to five years; 3) described a novel training and performance monitoring program developed at the Northeast Program Evaluation Center (NEPEC) for dissemination of this model; and 4) summarized initial performance data from the program's national dissemination through March 31, 1997 (Rosenheck et al., 1997). Successive reports summarized program developments and performance data for veterans treated in Fiscal years 1998 through 2001 (Neale et al., 1999-2002). The present (eighth) report summarizes performance monitors and outliers for 4,761 veterans treated by 71 teams during FY 2004.

MHICM Directive and Network Implementation Plans

On October 2, 2000, VHA Directive 2000-034 (enclosed as **Appendix A**) described a new initiative to establish **Mental Health Intensive Case Management (MHICM)** teams throughout VHA, based on the established evidence-based practice of Assertive Community Treatment (ACT) (Phillips et al, 2001). IPCC, ACT, and other intensive case management services that met standards of service intensity and access were renamed as **MHICM**. The Directive defined the target population, standards and monitoring procedures for MHICM services. Shortly thereafter, VHA headquarters initiated a process through which each VISN would submit a detailed plan evaluating the need for MHICM in their network and describing specific steps to implement appropriate services. This initiative was the result of recommendations made by the Under Secretary for Health's Special Committee on the Treatment of Severely Mentally Ill Veterans (known as the SMI Special

Committee) to assure appropriate community care would be available for veterans in the face of substantially reduced inpatient capacity. When many of the initial network plans lacked sufficient detail, the request was reissued with additional guidance and specific response templates, with responses due at the end of September 2001.

Team Development

In 1997, VA facilities and Veterans Integrated Service Networks (VISN) began to express interest in implementing MHICM teams for veterans with serious mental illness or co-occurring mental illness and substance abuse disorders. Where feasible, NEPEC staff provided assistance in the form of information, material, linkage and technical support for sites with various levels of commitment to implementation of the model. To assist local leaders with planning and decision-making about community-based intensive case management services, NEPEC developed an Implementation Planning Packet in 1999. The packet contained descriptive materials and literature about MHICM, a brief bibliography, an outline of minimum program standards and expectations, and implementation/fidelity checklists addressing essential elements of MHICM and assertive community treatment. It is useful for planning a new MHICM team or comparing the structure of an existing case management team to the model. An updated version of this material, included as **Appendix B** in the MHICM report, is available with MHICM monitoring forms at NEPEC web pages via the VA intranet (*http://vaww.nepec.mentalhealth.med.va.gov*) and public internet (*http://www.nepec.org*).

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Chapter Two:
National Assessment of MHICM Program Performance

VA Implementation of IPCC/MHICM

In 1993, responding to Congressional hearings and requests to enhance the priority of care for seriously mentally ill veterans within VA, the Director of Mental Health and Behavioral Sciences Service (Paul Errera, M.D.) submitted a "National Initiative for Seriously Mentally Ill Veterans" that featured the dissemination of Intensive Psychiatric Community Care (IPCC) programs. The VA National Planning Board approved the plan and Acting Under Secretary for Health agreed to provide $1.5 million in FY 1994 and $10 million in FY 1995 to establish new IPCC programs. The initial plan included additional funds for FY 1996 and FY 1997. VA Medical Centers and freestanding Outpatient Clinics were eligible to apply for IPCC funds, involving several levels of review.

Between 1993 and 1995, IPCC teams were implemented at 30 additional sites around the country using national funds, with one quarter of available resources allocated to each of the four existing regions. On the basis of detailed implementation and outcome data from the original MHI demonstration, a standard resource package was designed to support operation of IPCC teams. This package consisted of $325,000 for 6.25 FTE; $15,000 in All Other funds; and $30,000 (10% of personnel) for medical center administrative costs, for a total of $370,000 recurring. Seventeen sites were awarded the standard package and six sites were funded at lower levels (3.5 FTE; $200,000 PS; $15,000 AO; $20,000 OH) due to lower number of eligible veterans or rural location.

In support of the national dissemination, teams at Brockton, Canandaigua, Montrose and West Haven each received 1.0 FTE to allow experienced staff to act as mentor-monitors for 6-8 new teams. Over a two-year period, mentor teams participated in various planning and training activities that included: a 2-day planning meeting; weekly conference calls; four orientation and training sessions with clusters of teams; site visits; and ongoing formal and informal communication via mail, e-mail, fax, and telephone. Staff from each new program site attended a 1-day orientation and training session with NEPEC staff, mentors and other programs, then accompanied mentor staff to their home facility for several days of direct observation and training. Calls were held weekly or biweekly for 6-12 months and then tapered depending upon team status. All new teams maintained formal contact with their mentors for at least one year after orientation and training.

In addition to regular contacts with new program sites, mentor-monitors reviewed each team's progress via planning conference calls with NEPEC staff and other mentor-monitors (weekly: July 1994 to June 1996; quarterly: July 1996 to September 1997). Mentors also completed implementation checklists at six months and one year, reviewing with each team details of its configuration and operation. Finally, staff from each mentor team conducted at least one site visit of a FY 1994 program after nine to twelve months of operation. Site visits enabled mentors to observe the team when it was fully operational and to help the team resolve implementation difficulties.

Recent Implementation

In 1997, as VHA decentralized resource management, individual facilities and Veterans Integrated Service Networks (VISNs) began to request NEPEC consultation, training and technical assistance to implement MHICM teams. In subsequent years, teams were started with local resources in Detroit (MI), Central Iowa, Milwaukee (WI), St. Cloud (MN), Lyons (NJ) and the Rocky Mountain Network (VISN 19), and with network resources in VA Healthcare System of Ohio (VISN 10) and the South Central VA Healthcare Network (VISN 16). Many other sites requested information and consultation, and some facilities implemented case management teams that varied in structure and intensity of services without NEPEC assistance. VHA Directive 2000-034 prompted additional requests for consultation and training, and a network planning process described in Chapter One. To meet the training needs of new teams, NEPEC staff routinely request that network leaders provide support for team participation in face-to-face orientation and training, mentoring by a successful team and attendance at annual meetings of the Assertive Community Treatment Association (ACTA) or the United States Psychiatric Rehabilitation Association (USPRA, formerly IAPSRS),

Monitoring of the Bronx team was discontinued in 2000 after consultation revealed the program no longer operated within MHICM standards. Staff were reassigned to more traditional clinical and case management services. Mountain Home, Salisbury and Spokane teams merged with other programs, substantially impacting staff resources, caseloads, program fidelity and outcomes. More recent efforts to rejuvenate clinical operations at Salisbury have been successful.

MHICM National Program Monitoring

National monitoring of MHICM program performance, specified in VHA Directive 2000-034, relies on: client interviews, clinician and team progress reports, and centralized VA databases. Sources of data include: (1) Monthly FTE / Caseload reports monitoring program productivity, workload, staff turnover, and admissions; (2) Structured clinical interviews with each veteran at entry (Initial Data Form-IDF) and (semi-) annually thereafter (Follow-up Data Form-FDF) addressing client characteristics, clinical status, functioning, and service use; (3) (Semi-)Annual clinical progress reports of MHICM services and outcomes, completed by the veteran's primary case manager; (4) VA automated inpatient and outpatient service use data; (5) Fidelity assessments of team conformity with MHICM and ACT program guidelines; and (6) Staffing and budget summaries completed for an annual site progress report. Evaluation forms have been abbreviated to reduce paperwork demands.

MHICM program evaluation and monitoring variables target four domains following the classic formulation of Donabedian (1980): 1) **Program structure**: utilization and configuration of allocated resources, and caseload levels; 2) **Client characteristics**: socio-demographic, disability level, and clinical status at entry; 3) **Program Process**: pattern of service delivery, therapeutic activities and alliance, and readmissions; and 4) **Outcomes**: client use of hospital services, symptoms, functioning, quality of life, and satisfaction with services.

The following section of the report presents data on each monitoring domain, from client interviews, clinician progress reports, and automated databases, for veterans with follow-up data between October 1, 2003 and September 30, 2004. **Table 2-1** lists 47 current MHICM program monitors, indicating for each its relevant domain and program objective, the table in which its data

are presented in this report, and whether it is a "critical" program monitor (see below). Monitoring data are summarized in 33 tables and 6 figures. **Appendix D** summarizes the source and creation of all variables included in performance monitoring tables for this report. All MHICM teams participate in national performance monitoring, including the use of specific DSS identifiers (552, 546, 567) for clinical workload. Programs providing less intensive case management services exclusively are not monitored but workload is reported under DSS identifier 564. In FY 2001, VHA revised the Veterans Equitable Resource Allocation (VERA) reimbursement structure by adding veterans with 41 or more MHICM (552) visits in a year to those for whom networks receive higher reimbursement. For FY 2004, the potential reimbursement difference amounted to $32,709 per veteran.

Monitoring Team Performance

Premises on Which the Monitoring System is Based. MHICM is still a relatively new clinical activity in VA, requiring considerable freedom for clinical innovation. Monitoring efforts are based on the assumption that rigid regulations or performance standards might stifle the creative evolution of the model and fail to account for local variation. At the same time, since VA and non-VA studies show that poor implementation is associated with low cost-effectiveness (Rosenheck and Neale, 1998b; Mueser et al., 1998; Phillips et al., 2001), it is important to monitor the program as completely and objectively as possible, identifying performance standards as suggested by research. Through this monitoring system we have sought to assemble a body of data that can guide national and network program developers and front line clinicians as they implement MHICM teams in the years ahead.

Critical Monitors: Statistical Norms vs. Practice Standards. Although a complete set of practice standards has not been established for this program, monitoring data allow more than a description of individual site performance and statistical norms have been computed for selected critical monitors. The distinction between statistical norms and formal practice standards is an important one. Practice standards are established by a consensus of professionals as directive guidelines for appropriate clinical practice. They codify how health care should be conducted. Statistical norms, in contrast, reflect how health care is practiced on average without specifying exactly what is or is not acceptable practice. Although some practice standards have been established for the MHICM program through VHA Directive 2000-034, many aspects of the program have yet to be quantitatively standardized. Even in these areas, however, practice variation within the MHICM program can be measured and statistical outliers can be identified. Identification of statistical outliers must not be confused with identification of practice standard violations. Statistical outliers are worthy of attention as extremes on a continuum but, without exploring specific circumstances, one cannot draw conclusions about their exact meaning for program performance at a particular site.

FY 2004 Critical Monitors. Nineteen of forty-seven current MHICM measures identified in Table 2-1 were selected as critical monitors that assess aspects of the program of special importance to fulfilling its mission.[2] Most of these monitors have clear directionality (i.e. extremely large or small values suggesting a departure from program values and goals). Again, performance monitors should not be considered in isolation as absolute indicators of the quality of care delivered at any site.

[2]Two monitors from the 1997 Report were dropped from national monitoring when the Readmission Review Form was made optional as part of paperwork reduction effective January 1, 1998. Client symptom and functioning monitors (each comprised of two measures) were separated, with no net change in monitors.

In most cases they can be used to properly identify statistical outliers, the importance of which must be determined by follow-up discussions or visits with the sites.

Identification of Statistical Outlier Sites. For each monitor, site data are presented in tabular form. At the bottom of a column, sums and averages across all veterans (ALL SITES) are presented, along with the mean and standard deviation for teams included in the table (SITE). In the original report, sites were identified as outliers on a variable if the site value was more than one standard deviation from the mean. For subsequent reports, outliers have been identified by a more complex statistical procedure involving **risk adjustment** for differences in baseline characteristics of veterans across sites as well as differences in sample size. First, simple change scores are created for each variable by subtracting Pre- (entry or baseline) values from Post- (latest follow-up) values, and computing site means. Second, baseline covariates are standardized by subtracting the overall mean from individual values and computing transformed means. Third, analyses of covariance are run for each outcome, using 13 baseline covariates and 2 time-in-program variables. Least-squares means adjusted for covariates are computed for each site and t-tests are run comparing the adjusted means from each site with the median site value. Sites that differ statistically from the median site (p value <0.05) in the undesired direction are identified in Tables 2-6 to 2-25 with a shaded value. Sites that differ significantly from the median in the **desired** direction are identified with a bold underlined value. The performance of outlier sites is significantly different from the median site after adjusting for differences in veteran characteristics at entry and duration of program involvement.

It is important to note that outliers on critical monitors are being identified on a purely statistical basis. This is a more rigorous and conservative approach that, unlike previous use of standard deviations to identify outliers, accounts for site and other differences at baseline, baseline values of the variable in question, and length of time veterans are in the program. For variables where all site values are close together, no outlier may be identified. For variables where site values are skewed, outliers may be identified in one direction but not the other. For variables where site values are normally distributed, a balanced number of outliers may occur in both directions.

Minimum Program Standards

VHA Directive 2000-034 establishes procedural guidelines for MHICM teams that have been operationalized in eight **minimum program standards**. These complement the critical performance monitors. Minimum standards and threshold values include:

- Percent of veterans with psychotic diagnosis at entry *(50% or more)*
- Percent of veterans with 30 or more psychiatric inpatient days in year before entry *(50% or more)*
- Mean adjusted face-to-face contacts per week/veteran *(1.0 or more)*
- Ratio of veterans to clinical FTEE (mean caseload) *(7:1 to 15:1)*
- Percent of veterans for whom at least 60% of contacts occur in community setting *(50% or more)*
- Percent of veterans receiving psychiatric rehabilitation or skills training services *(25% or more)*
- Percent of veterans discharged from MHICM program *(< 20%)*
- Number of clinical service providers on the team *(4.0+ FTEE).*

Summary of Outliers. **Table 2-27** summarizes the number of Critical Monitor outlier values identified for each site in four major evaluation domains: program structure, client characteristics, program process and outcome. Critical Monitor outlier values are presented separately by domain in **Tables 2-28 to 2-31**. Outliers for Minimum Program Standards are presented in **Table 2-32**. Negative outlier values are outlined in summary tables. Data were made available to sites for review and discussed on national conference calls. NEPEC program assistants confer with individual sites about specific outlier variables as program evaluation and planning continue during the year.

Team Outlier Review. Prior to publication of this report, MHICM teams were asked to review draft tables and comment on critical monitors where their team value was identified as an outlier in the undesired direction. To facilitate review and comment, draft tables were posted on an intranet web site for direct access by MHICM teams. Outlier review responses are summarized in **Table 2-33**. The outlier review request and form are included in **Appendix C**.

Program Structure

MHICM Sites, Resources, and Expenditures

Seventy-one of seventy-eight MHICM teams that were in operation during FY 2004 and provided follow-up data on ten or more clients are listed in **Table 2-2**, characterized by site type and year of program start-up. Two established teams (Fort Harrison, Mountain Home) and five developing teams (Baltimore, Columbia, Danville, Philadelphia, Washington, DC) had insufficient data to be included in this report. The original MHI demonstration programs began in 1987. Teams at Chicago (West Side), Miami and Portland, initiated in 1992, were funded primarily by reallocating resources from three original IPCC teams that were discontinued for incomplete implementation of the program model. Dissemination sites were funded in 1994 and 1995, as part of VA's National Initiative for Veterans with Serious Mental Illness. Four orientation and training sessions were conducted with thirty dissemination sites between August 1994 and July 1995. Subsequent teams (1998 to present) were developed from local or network initiatives.

With decentralization of VA resource management to Veterans Integrated Service Networks (VISNs) in 1996, individual facilities and networks became the locus for funding and implementing new IPCC teams. The first locally funded and nationally monitored IPCC team was initiated by the John D. Dingle VA Medical Center in Detroit, Michigan in 1997. Additional teams were started with network resources by: Healthcare System of Ohio (VISN 10) (1998, 2001), South Central Healthcare Network (VISN 16) (2001), Mid-Atlantic Healthcare Network (VISN 6) (2002), Stars and Stripes Healthcare Network (VISN 4) (2003) and with local resources by: VA Midwest Healthcare Network (VISN 23) (1999, 2002), Rocky Mountain Network (VISN 19) (2000), Capitol Health Care Network (VISN 5) (2003), VA Palo Alto Healthcare System (2002), St. Louis VA Medical Center, VA Southwest Health Care Network (VISN 18) and VA Heart of Texas Health Care Network (VISN 17) (2003) and Pacific Healthcare Network (VISN 22) (2004).

In each case, the MHICM Project Director and NEPEC evaluation staff collaborated with an established MHICM ("mentor-monitor") team to provide orientation, training, and ongoing technical assistance for new team members during start-up. Mentors were assigned to observe team operation and service delivery, and consult on clinical or administrative questions. Regular conference calls

were held with members of new teams to support network communication about MHICM and community service needs of veterans with serious mental illness.

VHA resource allocation systems in recent years have diminished historical differences between General Medicine and Surgery (GM&S) and former Neuro-Psychiatry (NP) facilities. To illustrate the influence of facility type on the client population and therapeutic emphasis of individual MHICM teams, we continue to compare client characteristics for the two facility types. As of 2004, the proportion of teams (25 of 71; 35%) and total veterans (1,982 of 4,176; 46%) located at NP sites has grown somewhat since the original study (30% of sites and 40% of veterans), reflecting greater numbers of veterans who meet MHICM criteria at NP sites.

Initial resource allocations to current MHICM sites are enumerated in **Table 2-3.** Resources for early teams are presented in 1988 and 1993 dollars, respectively, and exclude funds for local administrative support as none were provided until 1994. Original programs involved more diverse treatment models and staffing configurations. Initial site resources reported in annual progress reports bring the total funds for MHICM programs in the most recent fiscal year (2004) to more than $24M, with 90% of funds going to cover personnel costs, and the remainder going to All Other expenses.[3] Allocation data have become less meaningful with decentralization of healthcare funding.

MHICM program expenditures for FY 2004, derived from site-generated annual progress reports, are summarized in **Table 2-4.** These data appear to accurately reflect expenditures for program staffing and operation at most sites during that period, although it was not possible to verify program funds merged with other services in mental health service line consolidations. Program expenditures for the 71 MHICM teams included in this report totaled $33.8M during FY 2004, with $31.9M (94%) expended as Personal Service funds for 415.2 FTEE. Cost data from MHICM teams not included in this report (they had fewer than 10 veterans with complete follow-up data) brought the national expenditure total to almost $36M. Average costs were $476,413 per team, $76,890 per filled FTE (salary plus benefits), and $7,105 per veteran client. Unit cost data, sensitive to the proportion of new teams, are provided in Table 2-26.

Table 2-5 presents the assignment and utilization of staff resources through FY 2004. More than half (40 of 71; 56%) of teams included in this report had 4.0 or more clinical FTE providing clinical services in the community as mandated by VHA Directive 2000-034, an improvement of 22% (24 of 52) over FY 2002. Of 31 teams below the clinical FTE standard, 11 (35%) lacked 0.5 FTE, the portion of team leader time accounted for team administration. Community standards for assertive community treatment define the team leader position as equal parts clinical and administrative, to assure the leader time for direct experience with community-based service delivery and participation in administration, supervision, liaison, and personnel management on behalf of the team.

Although most MHICM positions (92%) were filled, 22 teams (31%) had vacancies of more than 6 months as of September 30, 2004, a 33% decrease from FY 2002 (29 of 63, 46%). In addition, MHICM FTE from 11 teams (15%) had been detailed elsewhere without replacement for more than six months, a 50% decrease from FY 2002 (19 of 63, 30%). Some personnel gaps were enduring,

[3] In recognition of administrative costs associated with support for an IPCC team, each dissemination site received an increment of 10%, based on Personal Service dollars, for unmonitored administrative use.

with vacancies at fifteen of twenty-eight teams (54%) in FY 2003, nine of eighteen teams (50%) in FY 2002, and six of sixteen teams 38% in FY 2001, still unfilled at the end of FY 2004. Similarly, FTEE detailed away from the MHICM program at nine of nineteen teams (47%) in FY 2003, six of eleven teams (54%) in FY 2002, and six of twelve teams (50%) in FY 2001, were still detailed away at the end of FY 2004. In sum, many MHICM teams struggle to retain clinical resources even though the standard mandated by VHA Directive 2000-034 is well below that for assertive community treatment teams in other systems.

On the positive side, some MHICM teams benefited from local and network contributions of additional staff resources. Four of five staff in filled MHICM positions (338 of 415 FTEE or 81%) provided direct clinical services, primarily in community settings. This figure included 0.5 FTEE for team leaders, who were expected to provide a reduced level of community services, but excluded psychiatrists (about 15 FTE) (who generally devoted less than one day per week to MHICM veterans and rarely provided services in the community) and administrative-clerical support staff.

Caseload Levels

Clinical staffing levels and caseloads attained by each program for FY 2004 are shown in **Table 2-6.** Medical Support refers to the assignment of psychiatrists and nurses as members of the multidisciplinary team. Most teams maintained the active involvement of an assigned psychiatrist (69%) or nurse (94%) on the team. Clinical staffing levels varied considerably across sites, from fewer than 3.0 FTE at Columbus, Miami, St. Louis, Salisbury, San Diego, Sheridan and Togus to more than 9.0 FTE at Bedford, Canandaigua and Cleveland (including locally contributed resources). Fifty-nine teams (83%) maintained caseloads within the range specified by VHA Directive 2000-034 (7 to 15 clients per clinical FTE), with ten teams (14%) **above** the specified maximum (15:1) as of September 30, 2004. The latter is a modest (12%) improvement over FY 2003 (10 of 63, 16%). Several teams maintained lower caseload levels or waiting lists to preserve the intensity of their services in the face of persistently unfilled clinical positions.

Client Characteristics

Demographics and Entry Criteria

Socio-demographic characteristics for 4,761 MHICM veterans are presented in **Table 2-7,** for all sites combined (Overall) and by Site Type (GM&S, NP). Current data are comparable to original MHI study values (Rosenheck and Neale, 1998a; Rosenheck et al., 1995), with more Hispanic and African-American veterans, and fewer combat veterans, in the current group. One in five veterans (20%) reported exposure to combat. Few veterans (12.5%) reported paid employment in the three years preceding program entry. Site Type differences are less pronounced than those reported in the original multi-site study, though veterans from former Neuro-Psychiatric facilities are slightly older, more likely to be Caucasian, and less likely to have been married.

Tables 2-8 and 2-9 present Overall, Site Type, and Site data characterizing MHICM veterans at entry. Teams varied in their implementation of MHICM entry criteria. FY 2004 national MHICM program standards called for each veteran to meet the following criteria: 1) primary psychiatric diagnosis, especially a psychotic disorder; and 2) 30 or more days OR 3 or more stays of VA

psychiatric inpatient hospitalization during the year preceding program entry. These criteria were selected and monitored to ensure that resource-intensive MHICM programs targeted veterans with the greatest need for intensive support and the greatest opportunity for VA cost savings. As in the original demonstration, the current overall population of MHICM veterans met target criteria defining veterans with serious mental illness who are high users of VA psychiatric resources. All program participants had a primary DSM-IV psychiatric diagnosis and 75% had been hospitalized for a month or more in the year preceding entry. One in five veterans (21%) was diagnosed with a co-morbid substance abuse disorder. System-wide decline in length of stay has reduced the proportion of veterans meeting utilization criteria. As a result, current MHICM veterans spent an average of 70 days (±46 days) in the hospital in the year prior to entering the program, compared with 135 days {a -48% difference} for the 1997 Report (Rosenheck et al., 1997) and 144 days {-51%} for the original demonstration (Rosenheck and Neale, 1998a). Since 1997, the percentage of veterans entering the program directly from a VA psychiatric inpatient unit has fallen sharply, from 98% to 36%, and the proportion of veterans meeting the 30-day hospital use criterion has declined, from 91% to 75%.

Disability Status

Disability income data, presented by site in Table 2-9, reveal extensive VA and Social Security support for psychiatric disabilities among MHICM veterans at entry. More than half of MHICM veterans (N=2,248 of 4,057; 55.4%) reported receipt of VA compensation for a service-connected disability. Of these, 1,484 (74.2%) veterans were service-connected exclusively for a psychiatric disorder, 305 (13.6%) exclusively for a physical disability, and 275 (12.2%) for both. One in five (N=717, 18.5%) veterans reported receiving a non-service-connected disability pension. Many veterans reported receiving Social Security income (SSI: 15.1%; SSDI: 49.7%). Virtually all MHICM veterans (N=3,816; 94.1%) reported receiving some combination of VA and/or Social Security funds, and almost half (46.8.2%) said a representative payee managed their finances. Although the percentage of MHICM veterans who received VA compensation for service-connected disorders ranged from 36% to 90% across sites, the proportion of veterans receiving some form of disability support was consistently high, between 80% and 100%.

Program Adherence to Entry Criteria

Overall, MHICM teams demonstrated substantial adherence to entry criteria, presented in **Table 2-10**, despite facility differences on specific variables. Most veterans (75.1% ± 20.5% {standard deviation}) met the 30-day criterion for psychiatric hospital use in the year preceding entry. VHA service use data indicate that 83% of MHICM veterans also had 3 or more stays in the previous year. The vast majority of MHICM clients (90.2% ± 7.5%) had a psychotic diagnosis (schizophrenia, schizo-affective disorder, other psychosis, bipolar disorder) at entry. One in five veterans (20.9% ± 12.9%) had a secondary diagnosis of alcohol or drug abuse. Teams at Albany, Bedford, St. Cloud, Salem, Sheridan and Tomah greatly exceeded the national level by targeting veterans with co-occurring diagnoses of mental illness and substance abuse. Two in five MHICM veterans (43.6% ± 16.9%) had been hospitalized for two or more years but there was substantial site variation (range: 17.9% to 84.7%). Characteristic of typical onset of psychotic disorder in early adulthood, veterans reported histories of illness spanning more than two decades since their first hospitalization (mean = 23.1 ± 3.1 years; range: 15.5 to 31.9 years).

Measures of clinical status at program entry, shown in **Table 2-11**, indicate levels of client symptoms and functional impairment commensurate with extensive hospitalization and long-term mental illness. More than half of MHICM veterans (51.5% ±11.0%) reported low-level instrumental functioning on at least one activity of daily life (managing household chores, shopping, finances, medications). Despite accommodations to inpatient life by many veterans prior to entry, clinician ratings of global functioning at program entry were low (GAF mean: 39.9 ± 5.1) and interviewer ratings of observed symptoms were relatively high (BPRS mean: 40.6 ± 6.5), reflecting moderate psychiatric impairment. (Note: BPRS ratings were re-scored on a 1-Not Present to 7-Extremely Severe scale to conform with scoring guidelines and current reporting conventions). One in three MHICM clients (35.9% ± 24.1%) entered the program directly from an inpatient unit in FY 2004 and veterans were more likely to have been discharged or referred by an outpatient service. This extended a clear trend from the first report (when 98% of clients entered directly from the hospital) reflecting dramatic changes in psychiatric lengths of stay within VA since 1997.

Program Process

Program Tenure

MHICM principles emphasize continuity, frequency, intensity, and community-based services for veterans with serious and persistent mental illnesses who have not responded well to traditional modes of treatment. With respect to continuity, MHICM programs are expected to serve as a fixed point of clinical responsibility for their veterans, offering services for at least one year and providing services for as long as clinically necessary. Continuity data in **Table 2-12** indicate that MHICM programs continue to meet this expectation. A modest number (N=749, 15.7%) of MHICM clients (N=4,761) were discharged during the twelve-month report period. One hundred and thirty-seven additional veterans (2.9%) were formally transitioned to less intensive services by MHICM team staff per criteria defined by VHA Directive 2000-034. Of the 749 clients who were discharged, 187 (24.7%) veterans left the area and 91 (12.0%) veterans died (83 from natural causes, 7 from self-inflicted injuries). The rest of the discharged veterans asked to leave the program because they felt they no longer needed the services (N=90, 19.6%), formally graduated from the program (N=18, 4.0%), or for unspecified reasons (N=144, 31.2%). On average, veterans in the report (those with follow-up data during Fiscal Year 2004) had participated in the program for more than three years (mean=1,301 ± 615 days) at the time of the latest follow-up interview.

Service Delivery and Alliance

Table 2-13 presents service delivery data provided by MHICM case managers through structured semi-annual case summaries. These data indicate MHICM has been implemented according to principles that have been shown to result in positive outcome (Rosenheck and Neale, 1998a; McGrew et al., 1994). With respect to frequency of contact, 88.2% (±9.9%) of veterans were seen weekly or more and 52.8% (±17.4%) received telephone contacts on a weekly or more frequent basis. Regarding intensity of contact, 61.4% (±16.3%) of veterans were seen for more than an hour per week in the latest six-month period (after a mean of 3+ years in the program). Pertaining to location of contact, 89.3% (±9.5%) of veterans received more than 60% of their care in the community. FY 2004 contact levels are within a percentage point higher than FY 2003 values (Neale et al., 2004).

An important aspect of MHICM treatment involves the volume of direct, or face-to-face, contact between staff and clients, recorded as clinic stops in VA's centralized outpatient database, the National Patient Care Database (NPCD). MHICM teams record the bulk of their workload under DSS Identifiers #552 (MHICM Community Visit) and #546 (MHICM Telephone Contact). A clinic stop for MHICM group activities (#567), added in FY 2004, will be summarized in future reports. Overall, as illustrated in **Table 2-14**, each MHICM client had an average of 58 (±21.4) face-to-face visits by MHICM staff in the twelve months preceding September 30, 2004, plus 3 (±4.7) telephone contacts, for a cumulative national total of 279,350 visits. Adjusting visits to reflect the portion of the year that clients were enrolled in MHICM (mean = 83% ± .07) at each site amounts to about 69 (±25.0) face-to-face visits over twelve months or 1.33 visits per week, per veteran. Including telephone contacts, each veteran received about 73 total contacts, or 1.4 contacts per week, in FY 2004. Since each veteran can receive only one clinic stop per day for a given service, and veterans may have multiple contacts during the day, these data are likely to under-represent the actual level of MHICM contact. Overall, FY 2004 MHICM workload was virtually the same as in FY 2003 (1.35 visits / week) and beneath program expectations of 2-3 contacts per veteran per week. The proportion of teams (19 of 71; 26.7%) averaging less than one face-to-face contact per week (the negative outlier value) was virtually unchanged in FY 2004 after drops of 17% in FY 2003 and 32% in FY 2002.

Table 2-15 depicts the breadth of services provided by MHICM teams to program veterans during FY 2004. Most often, clients received supportive contact (97%), active monitoring (96%), psychotherapeutic interventions (83%), medication management (82%), and medical screening (75%). Less frequently, teams provided crisis intervention (68%), social or recreational activities (64%), housing support (52%) or rehabilitation services (49%). Substance abuse intervention (32%) was generally limited to veterans with specific needs related to dual diagnosis. Vocational support (21%) was the least used service with this severely disabled population. FY 2004 service levels increased slightly over FY 2003 values for vocational support (6%) but remained stable for other services.

Clinical case management models stress the importance of the therapeutic relationship between case manager and client, based on frequent and individualized contact, for improving clinical status (Harris and Bergman, 1993; Kanter, 1989). On the basis of earlier retrospective evidence linking therapeutic alliance with MHICM outcomes (Neale and Rosenheck, 1995), case manager-client alliance was monitored at all sites using seven-item versions of the Working Alliance Inventory modified to reflect case management work (Horvath and Greenberg, 1989). **Table 2-16** compares MHICM client perceptions of their current alliance with MHICM case managers at follow-up (Alliance mean: 39.8 ± 3.7) to adjusted ratings of their perceived alliance with previous inpatient / outpatient treaters, reported at entry (Alliance mean: 36.2 ± 2.2). Overall, client ratings of alliance were 10% higher for MHICM staff than for previous treaters, and veterans at 64 (90%) of 71 sites reported higher levels of alliance with MHICM staff.

ACT Model Fidelity

Each MHICM team completed a measure of program fidelity to prescribed elements of assertive community treatment, the Dartmouth Assertive Community Treatment Scale (DACTS; McGrew et al., 1994; Teague et al., 1998). The measure examines team conformity with ACT program criteria pertaining to human resources, organizational boundaries, service delivery, and

substance abuse treatment. Previous research has found that fidelity scores, particularly team factors, correlate strongly with reductions in hospital use (McGrew et al., 1994), and distinguish between effective and ineffective treatment teams (Teague et al., 1995). Results for MHICM programs, displayed in **Table 2-17**, show the teams performed well on three of the four domains [mean scores of 4.0 (human resources), 4.4 (organizational boundaries), and 3.9 (services)]. The fourth domain of the scale pertains to substance abuse treatment, which is not a primary emphasis of MHICM treatment, and results vary significantly by team (mean 2.9, range: 1.0-5.0). Although secondary substance abuse diagnoses are present in 20-25% of MHICM veterans at entry, most teams view a primary substance abuse diagnosis as an exclusion criterion. The overall MHICM DACTS score (mean = 4.0 ± .3) approximates those for other successful public sector ACT teams (Teague et al., 1998), despite including some teams that have shifted MHICM staff to other models of care. More than half (39 of 71, 55%) of MHICM teams achieved a score of 4.0 or more on the ACT Fidelity scale for FY 2004. [Note: VA scores include 23 of 26 original DACTS items. As a result, VA averages may be compared with non-VA programs but VA total scores are lower.]

Distance and Travel Time

For annual Clinical Progress Reports on their work with MHICM veterans, teams estimated the distance and travel time between their office and each veteran's residence. Follow-up reports indicated that most MHICM clients lived within 20 miles (N=2459, 69.3%) and 30 minutes (N=2410, 68.6%) of team offices (see **Figures 2-1 and 2-2**). At the same time, sizeable numbers of veterans lived between 21 to 40 miles (N=728, 20.5%) or 30 to 60 minutes (N=938, 26.7%) away, and some more than 40 miles (N=361, 10.2%) or 1 hour (N=164, 4.7%) away. The data suggest that MHICM teams have substantially extended access to VA mental health services for veterans with serious mental illness through their outreach activities.

Clinical Outcomes

Reduction in VA Hospital Use

A primary objective of MHICM teams is to reduce veteran reliance on psychiatric inpatient services in favor of more adaptive and less costly treatment alternatives. As evident in **Table 2-18**, this objective was well met, with all teams showing pre- to post-entry reductions in mental health hospital days after six, twelve and eighteen months. Only two teams (Grand Junction, Milwaukee) showed any increase in hospital use after 24 months. On average, MHICM veterans (N=4,198) reduced their VA psychiatric hospital use from 42.5 days pre-entry to 12.2 days post-entry (mean reduction = -30.3 ± 23.6 days) during their first six months in the program. Overall, hospital use reductions of similar magnitude (69-71%) were observed for periods of 12 months (**Table 2-18a**: N=3,723, -48 days), 18 months (**Table 2-18b**: N=3,285, -67 days), and 24 months (**Table 2-18c**: N=2,900, -88 days).[4] About half of the teams (31 of 63; 49%) had average reductions of 30 or more days per client after one year. As in the original demonstration (Rosenheck and Neale, 1998a), NP

[4] Paired t-tests revealed overall reductions in VA mental health hospital days to be statistically significant at 6 months (N=4,131, mean difference=-30.84, t=-39.29, p<0.0001), 12 months (N=3,683, mean difference=-48.79, t=-33.39, p<0.0001), 18 months (N=3,246, mean difference=-67.89, t=-30.24, p<0.0001), and 24 months (N=2,864, mean difference=-88.98, t=-28.36, p<0.0001).

teams continue to show greater reductions and cost savings relative to GM&S teams, although GM&S teams have been consistently effective in recent implementations. Hospital use reductions for teams at Northport, Hampton, Salem, Salisbury, Atlanta, Tuscaloosa, Northern Indiana and Tomah were diminished somewhat because some clients with few recent hospital days were "grandfathered" into MHICM from a pre-existing case management program.

One estimate of inpatient cost reductions associated with MHICM entry can be obtained by multiplying the mean reduction in hospital days by the national average hospital per diem rate (FY 2004 inpatient psychiatry per diem = $1,011) (Greenberg and Rosenheck, 2005). This method yields estimated inpatient cost reductions, per client, of $30,678 at 6 months, $48,708 at 12 months, $67,737 at 18 months, and $88,685 at 24 months, unadjusted for inflation. Although some reduction in hospital use is certainly attributable to expected client improvements over time and course of illness and to system-wide reductions in hospital use, present data suggest substantial cost reductions for veterans with serious mental illness who receive MHICM services.

Improvement in Clinical Status

Consistent with the MHICM mission and objectives, monitored outcomes include improvements in health status, community functioning, and quality of life, as well as customer satisfaction. Outcome measures include ratings of:

- Symptoms by clinician: Brief Psychiatric Rating Scale {BPRS}, Overall and Gorham, 1962;
- Symptoms by client: Symptom Severity {GSI}, Derogatis and Spencer, 1982);
- Global functioning by clinician: Global Assessment of Functioning {GAF}, American Psychiatric Association, 1995, Endicott et al., 1976;
- Instrumental functioning by client: Instrumental Activities of Daily Living {IADL}, Fischer et al., 1996);
- Quality of life by client: Lehman Quality of Life Inventory {QOL}, Lehman, 1988); and
- Satisfaction with VA mental health {VAMHSAT} and MHICM services {MHICM SAT} by client.

For each outcome measure, scores at program entry were compared with scores for the latest 6-month follow-up period in the report window (October 1, 2003 to September 30, 2004). Individual scores were adjusted for fifteen covariates including client characteristics, baseline values, and time in program. Median time in MHICM was 36 months. Data are presented in Tables 2-19 to 2-25.

Case manager ratings of 18 observed symptoms (BPRS) for MHICM clients, summarized in **Table 2-19,** showed an overall reduction of 13.9% from entry (N=4,015, mean sum: 40.6±6.5) to follow-up (mean sum: 34.9±11.5). Observed symptoms decreased at 60 of 71 sites (85%). Client ratings of severity for 30 symptoms on a 4-point scale (GSI: 1-not at all to 4-a great deal) (Fischer et al., 1996), in **Table 2-20**, yielded a similar overall reduction of 13.0% from entry (N=3,878, mean: 1.78±0.20) to follow-up (mean: 1.55±0.31), with lower 6-month ratings at 62 of 71 sites (87%).[5]

[5]Paired t-tests yielded significant differences reflecting improvement in both observed (N=2,478, mean difference: -5.72, t=-17.34, p<0.0001) and reported symptoms (N=2,314, mean difference: -0.22, t=-16.65, p<0.0001).

Reduction in Violent and Suicidal Behavior

MHICM veterans were asked whether they had thought or talked about harming someone, threatened anyone, or actually harmed anyone during their last 30 days in the community. Clients were also asked if they had been arrested or spent a night in jail, for any reason, during the six months preceding the interview. Entry and follow-up responses are presented in **Figure 2-3**. At entry, one in five veterans (N=729, 18.6%) reported thoughts of violence, one in eight (N=520, 13.3%) talked about hurting someone, one in eleven (N=342, 8.7%) threatened someone, and one in thirty (N=131, 3.3%) committed a violent act. At follow-up, levels of violence were much lower across all categories, with 41% fewer veterans reporting violent thoughts (N=294, 11.0%), 53% fewer veterans reporting violent talk (N=165, 6.2%), 63% fewer violent threats (N=86, 3.2%) and 54% fewer violent actions (N=23, 0.9%). The number of veterans reporting arrest (pre: N=359, 9.0%; post: N=64, 2.3%) or jail (pre: N=246, 6.2%; post: 42, 1.5%) also declined, by 75%, at follow-up.

Using similar items, MHICM veterans were asked if they had thought or talked about harming or killing themselves, threatened or attempted suicide in their last 30 days in the community, and whether a suicide attempt had resulted in hospitalization for medical reasons (see **Figure 2-4**). Though one in four veterans (N=1,009, 25.7%) reported thinking about suicide prior to entry, and one in six (N=608, 15.4%) had talked about it, fewer veterans had threatened (N=327, 8.3%) or attempted (N=205, 5.2%) suicide. All veterans who attempted suicide were hospitalized for medical reasons. At follow-up, the number of veterans in all of these categories had declined substantially, with fewer reports of suicidal thought (N=271, 10.1%), talk (N=142, 5.3%), threat (N=47, 1.7%), or attempt (N=8, 0.3%). Over a one-year period, 5 (0.01%) of the 4,761 veterans targeted in this report died from a completed suicide attempt. Another 105 veterans (2.2%) died from natural or unknown causes.

Indices based on the items described above showed statistically significant reductions in both violence (N=2,374; mean difference: -0.21, $t=-10.06$, $p<0.0001$) and suicidality (N=2,376; mean difference: -0.39, $t=16.62$, $p<0.0001$) for MHICM veterans.

Global and Instrumental Functioning

Case manager ratings of client global functioning (GAF) are presented in **Table 2-21.** VHA adoption of the Global Assessment of Functioning as a national performance monitor for VA mental health in 1998 prompted many facilities to re-train staff in use of the measure, often resulting in a more conservative scoring range. As a result, follow-up GAF scores were lower at many sites (27 of 71 sites, 38%), particularly for established teams with earlier baseline data. Overall means were 3.9% higher at follow-up (mean: 40.9 ± 9.9) than at entry (N=3,453; mean: 39.9 ± 10.5), a statistically significant t-test difference (N=2,480; mean difference: 1.32, $t=6.24$, $p<0.0001$) that is comparable with the 3.5% increase after six months in the first MHICM report (Rosenheck et al., 1997).

Client ratings of performance frequency (1-almost never to 5-almost always) for twelve specific daily skills (IADL), presented in **Table 2-22**, improved slightly (+3.2%) from entry (N=3,450, mean sum: 44.5 ± 3.3) to follow-up (mean sum: 45.6 ± 5.1). Two out of three teams (46 of 71, 65%) showed some level of improvement at follow-up and the overall t-test difference was statistically significant (N=1,809; mean difference: 1.40, $t=5.94$, $p<0.0001$).

Enhanced Quality of Life and Independence

Client ratings on five life satisfaction items (QOL; Lehman, 1988) using a 7-point scale (1-terrible to 7-delighted), reported in **Table 2-23**, indicated improvement (10.0%) from entry (N=3,618, mean sum: 26.1 ± 1.3) to follow-up (mean sum: 29.0 ± 2.1). Clients from 69 of 71 teams (97%) reported higher quality of life after participation in MHICM.[6]

Veterans were asked to indicate the number of nights in their most recent month in the community that they had spent in any of five living situations: a) **independent** (alone or with spouse, family, or friend in apartment or house); b) **minimally restrictive** (supervised apartment, boarding home, adult foster care); c) **moderately restrictive** (halfway house, treatment program, acute psychiatric diversion facility, treatment lodge, domiciliary); d) **extremely restrictive** (psychiatric hospital, skilled nursing facility, jail, or prison); or e) **homeless** (homeless or emergency shelter). In the month preceding their index hospital stay (or program entry), large groups of MHICM veterans reported living in independent (N=2,316, 57.9%), extremely restrictive (N=1,070, 26.9%), or minimally restrictive (N=924, 23.2%) residences (see **Figure 2-5**). Fewer veterans reported living in moderately restrictive (N=382, 9.6%) residences or having been homeless (N=158, 4.0%). At follow-up, the numbers of veterans who had been homeless (N=17, 0.6%) or in extremely restrictive residences (N=172, 6.3%) had declined by more than seventy-five percent. There was little change in the proportion of clients who reported living independently (N=1,506, 54.5%) or in moderately restrictive residences (N=234, 8.5%), but fifty-one percent more veterans reported living in minimally restrictive residences (N=964, 35.1%). At the same time, client satisfaction with living arrangements and safety increased by 8.1% and 8.7%, respectively. These data reflect the fluidity of living arrangements for veterans with serious mental illness and team reliance on boarding home, foster care and supervised apartments to complement MHICM services in off-hours.

Using the items described above, a housing independence index was created to compare veteran-reported housing status before and after program entry. Client reported days spent at each level of housing independence were multiplied by a corresponding weight (Independent x 4, Minimally restrictive x 3, Moderately restrictive x 2, Extremely restrictive x 1, Homeless x 0). Overall, a comparison of client ratings, presented in **Table 2-23a**, revealed a statistically significant 13.3% gain in housing independence from pre- (N=3,953, mean = 3.0 ± 0.4) to post-entry (mean = 3.4 ± 0.6) (N=2,430; mean difference: 0.40, t=16.23, p<0.0001).

Work and Rehabilitation Activity

A small number of MHICM veterans (N=502 of 4,021; 12.5%) reported full- or part-time employment in the three years before program entry. An even smaller group (N=280, 7.0%) reported paid employment in the month before program entry (see **Figure 2-6**). Among all clients, paid work declined slightly from an average of 1.0 day at entry to 0.7 days at follow-up. Among paid veterans, paid days averaged 14.0 days at entry and 16.2 days at follow-up. Fewer veterans reported work as volunteers (N=178, 4.4%) or participants in "work-for-pay" (N=142, 3.5%) or formal (N=82, 2.1%)

[6]Paired t-test results for client ratings of quality of life (N=2,169, mean difference: 2.56, t=18.7, p<0.0001), satisfaction with VA mental health services (multi-item: N=2,105, mean difference: 0.84, t=16.0, p<0.0001); single item: N=1,966, mean difference: 0.35, t=12.10, p<0.0001), and satisfaction with MHICM services (N=2,217, mean difference: 0.58, t=23.08, p<0.0001) were all significantly positive.

vocational rehabilitation programs at entry. At follow-up, veteran reports of paid work (N=126, 4.6%) declined, while participation in volunteer (N=123, 4.8%), "work-for-pay" (N=130, 4.7%) and formal rehabilitation (N=69, 2.6%) programs increased marginally. The relative weakness of vocational outcomes for MHICM teams may reflect: 1) the absence of staff with vocational rehabilitation expertise on MHICM teams; 2) severe levels of impairment among MHICM veterans; and/or 3) low incentive for work among MHICM clients who receive extensive VA and Social Security benefits for disability. Anecdotally, some MHICM staff reported their clients were "too disabled" or "unmotivated" to work and were often refused admission by vocational rehabilitation services.

Satisfaction with VA Mental Health Services

Client ratings of the overall quality of VA mental health services (VAMHSAT, 3 items), presented in **Table 2-24**, showed a statistically significant 9.0% gain from pre- (N=3,643; mean: 9.5 ± 0.7) to post-entry (mean: 10.3 ± 0.9). Clients from 69 of 71 teams (97.2%) indicated greater satisfaction with VA mental health services at follow-up. Single-item comparison of client satisfaction with MHICM and general VA mental health services using a 5-point scale (0-very dissatisfied to 5-very satisfied), summarized in **Table 2-25**, found program participants favoring MHICM (N=3,744; mean: 3.7 ± 0.3) by almost 20% over general services (mean: 3.1 ± 0.3). Veterans on all 71 teams showed improved satisfaction after participation in MHICM. MHICM services, comprising the bulk of psychiatric care for most program clients, were positively associated with gains in overall satisfaction with VA mental health services, up by 11.8% (mean: 3.5 ± 0.8) at the time of follow-up.

Unit Costs

As its name suggests, Mental Health Intensive Case Management involves providing frequent services to veterans who are among the most seriously ill and most expensive to treat in the VA system. The extent of care required by this group, and the setting where services are delivered, have prompted low recommended client-to staff levels that, in turn, contribute most heavily to personnel and program expenses. Using FY 2004 program expenditures and data from previously presented tables, **Table 2-26** outlines rough program costs for various units of service. For 4,761 veterans in FY 2004, MHICM services cost about **$7,105 per veteran**, an increase of 23% over original study data ($5,793) unadjusted for inflation (Rosenheck, Neale, and Frisman, 1995) and 9% over FY 2003 costs ($6,507). On the basis of filled positions (415.20 FTE) and FY 2004 personal service expenditures plus benefits ($33.8M), the average annual cost per position was **$76,890 per FTE** (salary plus benefits), 7% higher than FY 2003 ($71,646). Adjusting total MHICM visits to reflect a full year of service for each veteran (a cumulative total of **329,554** visits for a year), the cost for MHICM services increased to **$103 per visit**, 11% higher than FY 2003. MHICM cost increases for FY 2004 reflect rapid expansion of the program over the past three years. Although the numbers of teams (23, +47.9%), FTE (163.8, +65.2%), clients (1,572, +49.3%) and contacts (117,139, +55.1%) have increased substantially, the average team caseload per clinical FTE is somewhat lower (.70, -- 5.5%), consistent with the development of new teams that are still developing full client caseloads and have yet to achieve typical cost-benefit levels.

Outlier Review

MHICM teams were asked to review critical monitors and minimum standards where a team value was identified as an outlier (i.e., failed to meet the minimum standard threshold or differed statistically from the median site in the undesired direction). Minimum standards were based on VHA Directive 2000-034 and critical monitor outliers were based on MHICM program guidelines and principles. For each outlier on a critical monitor or minimum standard, the team was asked to identify a reason for outlier status from among five options and to explain and address it. The Outlier Review request and review form are included in **Appendix C**.

Negative outlier values are shaded in report tables and outlined (boxed) in summary tables. Critical monitor outliers are summarized by site across monitoring domains in **Table 2-27** (Site Performance) and within domains in **Table 2-28** (Team Structure), **Table 2-29** (Client Characteristics), **Table 2-30** (Clinical Process), and **Table 2-31** (Client Outcome). Minimum standards outliers are summarized by site in **Table 2-32 A&B**. Team outlier review responses are summarized in **Table 2-33** (Outlier Review Summary) and briefly described here.

Four teams operating in FY 2004 – Chicago IL, Chillicothe OH, Cleveland OH, and Topeka KS - had no outlier values. The 67 remaining teams accounted for 184 negative outliers (2.8 outliers per team), a rate comparable to FY 2003 (163 outliers {2.7 outliers per team} among 60 teams). Ten teams (14%) had five or more outliers, up from 6 teams (10%) in FY 2003. In order of frequency, outlier review responses from 67 teams indicated: (C) Problems in program implementation for which corrective action had been taken (Sites: 36 or 54% of responding sites; Responses: 65 or 35% of total outliers); (D) Problems in program implementation for which corrective action was planned (Sites: 36 or 54%; Responses: 65 or 35%); (A) Legitimate team differences that did not conflict with national program goals (Sites: 28 or 42%; Responses: 44 or 24%); (B) Local policies that conflicted with national program goals (Sites: 16 or 24%; Responses: 19 or 10%); and (E) Implementation problems for which no corrective action was planned (Sites: 5 or 8%; Responses: 8 or 4%).

By domain, Team Structure outliers remained the most common (91 outliers at 52 sites, 73%), followed by outliers in Clinical Process (59 outliers, 42 sites), Clinical Outcome (24 outliers, 21 sites), and Client Characteristics (11 outliers at 11 sites). By monitor, outliers were most common for Team Size (31), Unfilled FTE and Physician Support (22), Face-to-Face Contact (20), Client Discharge (18) and Intensity of Contact (14), and least likely for Psychotic Diagnosis and GAF (0), Location of Contact and Quality of Life (1) and Reported Symptoms (2). Results corroborate team reports of problems maintaining staff resources to provide intensive services for veterans with serious mental illness and general adherence to ACT fidelity standards.

Adherence to Minimum Standards

VHA Directive 2000-034 established procedural guidelines for MHICM teams that were operationalized in eight **minimum program standards**. FY 2004 outliers for MHICM minimum program standards (see page 16) are presented by site in Table 2-32A and B and reviewed here. Adherence was good or excellent (80% or better) for five standards and fair or poor (less than 80%) for the other three. Among standards with a higher adherence rate, all seventy-one teams (100%) reported that the majority of veterans they treated (Mean: 89%; Range: 61% to 100%) had psychiatric

diagnoses that included psychosis (i.e., schizophrenia, schizo-affective or bipolar disorder, other psychosis). Seventy teams indicated that the majority of their clients (Mean: 89%; Range: 45% to 100%) received most MHICM clinical services in community settings. Sixty-four teams (90%) reported providing rehabilitation services (e.g., client skills training) to at least one quarter of their clients (Mean: 49%; Range: 8% to 93%). Sixty teams (85%) indicated that a majority of their clients (Mean: 75%; Range: 22% to 100%) had 30 or more psychiatric inpatient hospital days in the year preceding program admission. Fifty-nine teams (83%) maintained client to staff ratios between 7:1 and 15:1 (Mean: 12.5; Range: 6.3 to 35.0).

Among standards with a lower adherence rate, fifty-three teams (75%) met the criterion of discharging fewer than 20 percent of their clients per year (Mean: 16%; Range: 2% to 36%). Fifty teams (73%) had at least weekly face-to-face contact with their clients (Mean: 1.3; Range: 0.43 to 2.92). Forty teams (56%) had 4 or more clinical FTEE available to provide community-based services (Mean: 4.8; Range: 1.2 to 11.5 FTEE). Non-adherence to the latter standards appeared to be largely a consequence of staff reallocation. Most of the teams that did not meet the staffing standard had been funded initially with four or more case manager positions but lost positions over the years when staff were detailed to other units, not replaced, or hiring was frozen. In many cases, staff losses coincided with higher caseloads and lower contact frequency. Eighteen of seventy-one MHICM teams (25%) met all eight minimum program standards in FY 2004, comparable with 15 teams (24%) in FY 2003 and 11 teams (21%) in FY 2002.

Transition to Lower Intensity Case Management Services

VHA Directive 2000-034 (Appendix E) defined a procedure for transitioning MHICM clients to lower intensity services. Teams may begin to assess client readiness for a lower level of care, after one year of MHICM services, using five criteria: “clinically stable, not abusing addictive substances, not relying on extensive inpatient or emergency services, capable of maintaining themselves in a community living situation, and independently participating in necessary treatments”. Clients who meet all criteria may be transitioned to less intensive MHICM services or to standard clinical services.

As mandated by the Directive, NEPEC began monitoring client transition to lower intensity services during FY 2000. Through FY 2002, 547 MHICM veterans were transitioned to less intensive services: 67% to lower intensity services by the MHICM team, 20% to low intensity services elsewhere, and 10% discharged without additional services. When transitioned, veterans were assessed as: clinically stable (80%); not abusing addictive substances (68%); not relying on extensive inpatient or emergency services (75%); capable of maintaining themselves in a community living situation (68%); and independently participating in necessary treatments (63%). These data indicate that up to one-third of transitioned veterans did not fully meet VHA Directive 2000-034 criteria, though the majority continued to receive low intensity services from the MHICM team. Transitioned veterans continued to receive a range of clinical services, including case management (63%), day treatment (13%), outpatient mental health therapy (47%), outpatient medication management (68%), substance abuse services (8%), residential services (24%), vocational services (10%), inpatient care (11%), or nursing home care (7%). Only 28 veterans (5%) were later restored to regular MHICM services (most re-hospitalized) because of real or imminent risk to themselves or others, impaired ability to care for self, and unwillingness or inability to participate in needed treatments. Teams reported that 14 clients (3%) may have been at greater risk due to transition to less intensive services.

At the end of FY 2004, 351 veterans (8%) were receiving low intensity case management services from 48 MHICM teams (62%). During the year, 137 MHICM veterans (3% of 4,761) were transitioned to less intensive services: 42% to lower intensity MHICM services, 32% to low intensity services elsewhere, and 15% discharged without additional services. Eight veterans were later restored to regular MHICM services due to real or imminent risk to themselves or others. When transitioned, veterans were assessed as: clinically stable (75%); not abusing addictive substances (57%); not relying on extensive inpatient or emergency services (68%); capable of maintaining themselves in a community living situation (62%); and independently participating in necessary treatments (57%). Transitioned veterans continued to receive case management (44%), day treatment (14%), outpatient mental health therapy (62%), outpatient medication management (64%), substance abuse services (10%), residential services (30%), vocational services (8%), inpatient care (10%), or nursing home care (8%). Five clients were viewed as possibly at greater risk due to transition to less intensive services.

MHICM VERA Complex Class Status

In FY 2002, MHICM veterans became eligible for Complex Class reimbursement status under VERA (Veterans Equitable Resource Allocation) if they were registered in a MHICM program (participated in NEPEC program monitoring) and had 41 or more clinic stops (visits) under DSS Identifier 552 during the Fiscal Year. For FY 2004, average Complex Care funding under VERA was $35,957 per veteran. FY 2004 Allocation Resource Center data indicate that 2,715 (57.4%) of 4,761 MHICM veterans covered by this report were included in the MHICM complex class reimbursement category. An additional 1,330 veterans (27.9%) were included in the Chronic Mental Illness patient class, for a total of 4,045 MHICM veterans receiving complex class reimbursement for serious mental illness, and 319 veterans qualified for MHICM complex class reimbursement at sites not covered by this report. **Appendix G** presents totals for MHICM complex class veterans for FY 2004 by facility.

MHICM Services for MHICM and Non-MHICM Veterans

MHICM visits are recorded in VA outpatient databases under DSS Identifier or Stop Code 552. Non-MHICM or general case management contacts (typically low intensity) are reported under identifier 564. FY 2004 workload data for MHICM veterans are summarized in **Appendix E** (see also Table 2-14) and for non-MHICM veterans in **Appendix F**. For the 71 teams covered by this report, **MHICM veterans** (N=4,469) received 252,271 regular MHICM ("high intensity") visits in FY 2004, an average of 56 visits per veteran (Appendix E). MHICM visits represented 99% of total client services for this group. A small minority of MHICM veterans (N=186 or 4%), at nineteen sites, received general case management visits (966), about 5 visits per client. A large number of **Non-MHICM veterans** (N=2,930) were credited with MHICM visits, typically at facilities with established or developing MHICM teams. Contacts for these veterans (39,489 visits) made up a smaller portion (63%) of total case management services and averaged 13 visits per veteran. Most of these veterans were presumably seen for assessment or screening visits or clinic stop code 552 (MHICM visit) was incorrectly assigned. Only veterans who are fully enrolled or registered in the performance monitoring system are considered MHICM participants under VHA Directive 2000-034. A substantial group of non-MHICM veterans (N=2,581) received general case management services (22,882 visits), an average of 9 visits per veteran. Many of these contacts were reported by facilities without a MHICM team.

Program Performance Trends: 1997 to 2004

This is the seventh MHICM performance monitoring report, dating back to FY 1997. Beginning with this report, we will summarize trends in program performance by monitoring domain, comparing the latest results (FY 2004) with those for the first report (FY 1997) and the three most recent years (FY 2001 to FY 2003). These data are presented in **Appendix H**.

Data on **team structure** show a significant increase in the number of MHICM teams (+95%) and clients (+136%), as well as program expenditures (+166%) since 1997. Most of this change has come since October 2000 with implementation of VHA Directive 200-034. The number of MHICM staff positions also increased but at a lower rate (+84%). Positions remain filled at about the same level as last year (+2%). The percentage of teams with at least one team member detailed to another service has increased dramatically (+100%). Program cost per client increased (+17%, unadjusted for inflation) and the client to staff ratio held steady (2%).

Client characteristics data indicate an increase in the number of veterans from minority racial/ethnic groups (+14%) since 1997. Reflecting VHA's shift toward outpatient services, client days in hospital have decreased (-41%) and the proportions of clients with 30 or more hospital days (-18%) and 2 or more years of lifetime hospitalization (-25%) also have declined. The vast majority of MHICM clients continue to have a psychotic diagnosis (2%). Despite some targeting of clients with co-occurring substance use, that group has decreased somewhat (-16%) since 1997. Client participation in paid employment prior to entry is unchanged (0%) while receipt of public support income has increased (+4%).

Service delivery data provide evidence that MHICM veterans continue to be contacted weekly (+4%) if less frequently (-19%) than in 1997. FY 2004 contacts remained at the FY 2001 level. More clients receive the majority of their services in community settings (+14%) than in 1997. The rate of discharge is unchanged (0%) even as more veterans (currently 8%) are transitioned to less intensive services by the team. Veteran ratings of their therapeutic alliance with MHICM staff have increased (+27%) since 1997, and team fidelity to assertive community treatment principles has remained steady (4.0, 0% change).

Client outcome data show sizeable improvements in percentage reduction for both observed (100%) and reported (+117%) symptoms at follow-up, since 1997. Quality of life ratings have improved (+25%) and satisfaction with MHICM services has remained high (+1%). Although client inpatient days prior to program entry continue to decline (–39% overall, -9% in the past year), the percentage reduction in client hospital days at follow-up has increased (+11%).

Consistent with VHA's commitment to expand access to community-based services, the MHICM program has grown since 1997. MHICM has benefited from network and facility support and a national initiative to implement VHA Directive 2000-034. Review of outliers and team reports continue to underscore the importance of attention to team and caseload size and staff training. Performance monitoring data show that MHICM teams continue to target veterans who need intensive support, providing them with quality services in community settings. After seven years of MHICM performance monitoring, client outcomes are strong and satisfaction remains high.

Summary and Conclusions:

Development of Mental Health Intensive Case Management services in VA has followed a model sequence of problem identification, program development, evaluation, and dissemination (Rosenheck, 2001). Modeled on evidence-based, "best practice" programs in widespread use elsewhere in the nation (Rosenheck and Neale, 2001; Phillips et al., 2001), the MHICM program is a well-defined intervention that meets local needs within its operational parameters. A rigorous study demonstrated the program's cost-effectiveness and long-term benefits in VA settings, as well as the need for training and monitoring to assure proper implementation. Both VA and non-VA studies show program benefits are not likely to be attained unless team operation is carefully monitored (Mueser et al., 1998). MHICM has been successfully implemented at more than 80 VA healthcare systems and site-by-site performance monitoring data show the program continues to provide effective and efficient services to deserving veterans in great need.

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